

LONDON- WEST MIDLANDS ENVIRONMENTAL STATEMENT

Volume 5 | Technical Appendices

CFA19 | Coleshill Junction

Operational assessment (SV-004-019)

Sound, noise and vibration

November 2013

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Department
for Transport

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Appendix SV-004-019

Environmental topic:	Sound, noise and vibration	SV
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1 Introduction

1.1 Structure of the sound, noise and vibration appendices

- 1.1.1 The sound, noise and vibration appendices comprise four sections. The first of these details the methodology used (Appendix SV-001-000) and relates to the sound, noise and vibration assessment for all community forum areas (CFA).
- 1.1.2 For the Coleshill Junction community forum area (CFA19), the other three sections are as follows:
- baseline sound, noise and vibration (Appendix SV-002-019);
 - construction sound, noise and vibration (Appendix SV-003-019); and
 - operational sound, noise and vibration (Appendix SV-004-019) (this appendix).
- 1.1.3 The outcomes of this assessment are summarised in Volume 2: CFA19 Report, Chapter 11 Sound, Noise and Vibration.
- 1.1.4 Maps referred to throughout the sound, noise and vibration appendices are contained in the Volume 5 sound, noise and vibration map book.
- 1.1.5 This appendix presents the likely noise and vibration impacts, effects and significant effects arising from the operation of the Proposed Scheme for the Coleshill Junction area on:
- people, primarily where they live ('residential receptors') in terms a) individual dwellings and b) on a wider community basis, including any shared community spaces; and
 - community facilities such as schools, hospitals, places of worship, and also commercial properties such as offices and hotels, collectively described as 'non-residential receptors' and 'quiet areas'.
- 1.1.6 The assessment of likely impacts, effects and significant effects from operational noise and vibration on agricultural, community, ecological or heritage receptors and the assessment of tranquillity are presented in the following documents within Volume 5:
- Agriculture, forestry and soils Appendix AG-001-019
 - Community Appendix CM-001-019
 - Ecology Appendix EC-005-003
 - Heritage Appendix CH-003-019
 - Landscape and Visual Appendix LV-001-019

1.2 Evaluation of impacts and effects

- 1.2.1 This appendix provides a quantitative assessment of operational noise and vibration impacts and effects and a qualitative assessment of likely significant effects, based on the impacts and effects identified and other local context information consistent with the scope and methodology defined for the Proposed Scheme.
- 1.2.2 Indirect effects arising from permanent changes in traffic patterns on the existing road and rail networks as a consequence of the Proposed Scheme are also reported in this appendix, where they would occur within the study area as defined in Volume 5 Appendix SV-001-000.
- 1.2.3 Route-wide impacts, effects and significant effects associated with noise or vibration from the operation of the Proposed Scheme are reported in Volume 3.
- 1.2.4 Off-route effects of noise or vibration arising from the operation of the Proposed Scheme, including those likely to arise from permanent changes in traffic patterns on roads or railways outside of the study area for direct effects are reported in Volume 4.
- 1.2.5 In undertaking the assessment of sound, noise and vibration, consistent with EIA Regulations and emerging National Planning Practice Guidance¹ a differentiation between impacts effects, adverse effects and significant effects is made. Further information is provided in Volume 5: Appendix SV001-000.
- 1.2.6 The assessment of impacts has been undertaken at assessment locations that are representative of a number of dwellings or other sensitive receptors. The Assessment Locations employed in this assessment are presented on map series Sv-02 in the CFA19 Volume 5 sound, noise and vibration map book.

¹ National Planning Practice Guidance – Noise <http://planningguidance.planningportal.gov.uk> ; refer to the table summarising noise exposure hierarchy

2 Scope, assumptions and limitations

2.1 Regional and local policy guidance

2.1.1 The policy framework for sound, noise and vibration is set out in Volume 1 and in Appendix SV-001-000. As part of the engagement with local authorities through the Planning Forum Sub Group - Acoustics, information regarding any specific local planning guidance in respect of noise and vibration has been requested. Whilst no information has been received for this study area via the Planning Forum Sub Group - Acoustics, the following local policy guidance on noise and vibration has been identified:

- The Solihull Unitary Development Plan - Feb 2006; and
- The North Warwickshire Local Plan - July 2006.

2.1.2 This guidance has been considered as part of formulating the detailed application of the impact and significance criteria set out in Volume 5, Appendix SV-001-000.

2.2 Engagement

2.2.1 Details of engagement on a route-wide basis with the local and county authorities' Environmental Health Practitioners via the Planning Forum Sub Group - Acoustics, is set out in Volume 1, Section 8.

2.2.2 Engagement with communities has been via the Community Forums, as set out in Volume 1. In respect of sound, noise and vibration the following discussions have taken place:

- general discussions in respect of local issues, including possible ways to avoid and mitigate the potential impacts of noise or vibration
- September / October 2012; a specific presentation about sound, noise and vibration with discussion afterwards with one of the project team specialists;
- November / December 2012; specific request for the Community Forum to propose baseline sound monitoring locations;
- January / February 2013; feedback to the Community Forum on any proposed baseline monitoring locations; and
- verbal / written response to questions on sound, noise and vibration.

2.3 Methodology

2.3.1 The methodology used for the assessment of airborne sound, ground-borne sound and vibration impacts and the determination of significant effects is defined in the Scope and Methodology Report (SMR) (Volume 5: Appendix CT-001-000/1), is clarified in a number of areas by the SMR addendum (Volume 5: Appendix CT-001-000/2). Further information is contained in Volume 5: Appendix SV-001-000.

2.4 Assumptions

- 2.4.1 Route-wide assumptions are outlined in Volume 1, Section 8, and are further detailed in Volume 5: Appendix SV-001-000. Local assumptions that apply to the assessment of operational sound noise and vibration within this CFA are set out in Volume 2: Report 19.

2.5 Local limitations

- 2.5.1 In this area, there are a number of locations where the land or property owners did not permit baseline sound level monitoring to be undertaken at their premises. However, sufficient information has been obtained to undertake the assessment. Further information is provided in Volume 5: Appendix SV-002-019.

3 Environmental baseline

3.1 Existing baseline

- 3.1.1 Baseline sound level data has been collected at locations representative of the airborne sound-sensitive receptors. The existing and future baseline airborne sound levels derived from these measurements are included within Table 3. Details of the baseline data collection and the methodology are given in Volume 5: Appendix SV-001-000 and specifically for this study area in Volume 5: Appendix SV-002-019.
- 3.1.2 The majority of receptors adjacent to the line of the route are not currently subject to appreciable vibration and therefore vibration at all receptors has been assessed using the absolute vibration criteria as described in Volume 5: Appendix SV-001-000.

3.2 Future baseline

- 3.2.1 The assessment is based upon the predicted change in sound levels that result from the Proposed Scheme. The assessment initially considered a reasonable worst case (that would overestimate the change in levels) by assuming that sound levels would not change from the existing baseline year of 2012/2013. Where significant effects were identified on this basis, the effects have been assessed using the baseline year of 2026 to coincide with the proposed start of passenger services. The future baseline is for the sound environment that would exist in 2026 without the Proposed Scheme.

4 Effects arising during operation

4.1 Introduction

4.1.1 The assessment is reported first for ground-borne sound and vibration and then for airborne sound. Under each of these headings, the results of the quantitative identification of impacts and effects are presented. This is followed by the identification of significant effects and the evidence used to support these conclusions.

4.1.2 The structure of this assessment report is:

- Avoidance and mitigation measures
- Quantitative identification of impact and effects
 - Ground-borne sound and vibration
 - Residential
 - Non-residential
 - Airborne sound
 - Residential
 - Non-residential
- Assessment of impacts and effects
 - Residential receptors: direct effects – dwellings
 - Residential receptors: direct effects – communities
 - Residential receptors: indirect effects
 - Non-residential receptors: direct effects
 - Non-residential receptors: indirect effects
 - Cumulative effects from the proposed scheme and other committed development.

4.2 Avoidance and mitigation measures

4.2.1 These are set out in Volume 2: Report 19.






4.3 Quantitative identification of impacts and effects

Ground-borne sound and vibration

4.3.2 Assessment locations defined for the quantitative assessment of impacts are shown on map series SV-02 in the CFA19 Volume 5 sound, noise and vibration map book.

4.3.3 For each Assessment Location, the assessment results for residential and non-residential receptors are presented in Table 1. Explanation of the information in Table 1 is provided in Appendix SV-001-000, with the following additional notes.

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B	For non-residential receptors further detail about the type of effect is set out in the text of Volume 5: Appendix SV-001-000.
NA	Type of effect - Generally no adverse effect
A	Type of effect - Adverse effect
S	Type of effect - Significant adverse effect
VDV	Vibration Dose Value
~	The forecast adverse effects are not considered to be significant on a community basis (further information on methodology is provided in Volume 5: Appendix SV-001-000).
^	The impact methodology has identified a potential significant effect at this receptor which based upon further qualitative information is not considered to be a likely significant effect. Please refer the end of this Appendix for further information.
	Where the significant effect column is highlighted in pink, then a significant effect is identified at the referenced residential community area, or individual receptor.
	Yellow denotes a low ground-borne noise impact or a minor ground-borne vibration impact
	Orange denotes a medium ground-borne noise impact or a moderate ground-borne vibration impact
	Red denotes a high ground-borne noise impact or a major ground-borne vibration impact
	Dark red denotes a very high ground-borne noise impact

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Table 1: Ground-borne sound and vibration levels, noise and vibration impacts and effects

Assessment location		Impact criteria				Significance criteria								Significant effect
		Ground-borne sound level dB L _{pASmax}	VDV m/s ^{1.75} Daytime (07:00 - 23:00)	VDV m/s ^{1.75} Night time (23:00 – 07:00)	% increase or decrease in VDV	Number of impacts represented	Type of effect	Type of receptor	Receptor design	Existing environment	Unique feature	Combined impact	Mitigation effect	
ID	Area represented													
126717	Birmingham Road, Coleshill	-	0.05	0.02	-	3	NA	R	T	-	-	-	-	
146872	Gilson Road, Coleshill	-	0.17	0.08	-	4	NA	R	T	-	-	-	-	
146974	Gilson Road, Coleshill	-	0.30	0.15	-	4	A	R	T	-	-	-	-	OSV19-Co1
147008	Meadowbank Drive, Coleshill	-	0.27	0.14	-	9	A	R	T	-	-	Y	-	OSV19-Co1
130843	Bromwich Court, Gorsey Lane, Coleshill (General Commercial)	-	0.26	0.13	-	4	B	G4/V3	T	-	-	-	-	
130843	Highway Point, Gorsey Lane, Coleshill (General Commercial)	-	0.26	0.13	-	1	B	G4/V3	T	-	-	-	-	

Impact Summary





- 4.3.4 The operational ground-borne noise and vibration impacts identified in Table 1 are summarised in Table 2.

Table 2: Summary of operational ground-borne noise and vibration impacts

	Number of ground-borne noise impacts			
	Low	Medium	High	Very High
Residential properties	0	0	0	0
Non-residential properties	0			0
	Number of ground-borne vibration impacts			
	Minor	Moderate	Major	Risk of building damage
Residential properties	13	0	0	0
Non-residential properties	0			0

Airborne sound: direct impacts and effects

- 4.3.5 The direct effects from the operation of the Proposed Scheme as well as any new, amended or altered roads or railway lines, which are identified as part of the scheme, are presented in Table 3.
- 4.3.6 The assessment information, impact criteria and significance criteria for the assessment of the incorporated mitigation case at residential and non-residential receptors are presented in Table 3. The results should be considered in conjunction with the information contained in map series Sv-02 in the CFA19 Volume 5 sound, noise and vibration map book.
- 4.3.7 Explanation of the Table 3 information is provided in Volume 5: Appendix SV001-000, with the following additional notes.

	Where the significant effect column is marked, then a significant effect is identified at the referenced group of dwellings, or individual residential or non-residential receptor.
	Yellow denotes a minor impact at a residential building – a change is of 3-5 dB
	Orange denotes a moderate impact at a residential building – a change is of 5-10 dB
	Red denotes a major impact at a residential building – a change is of >10 dB
*	Day - $L_{pAeq,07:00-23:00}$
**	Night - $L_{pAeq,23:00-07:00}$
***	Max - L_{pAFmax} In the Proposed Scheme only column, two values are presented. The first is the value for the HS2 mitigated train and the second is the value for the TSI compliant train. For further information refer to Volume 5: Appendix SV-001-000.
****	Where the Proposed Scheme modifies an existing source, i.e. road or railway realignments, the <i>Proposed Scheme only</i> level in the table includes the sound from the modified source. In this situation the <i>Do something (Opening year baseline + Year 15 traffic)</i> level has been corrected so as to not double count the sound associated with the road or railway on its new and existing alignment.
A	Adverse effect
B	For non-residential receptors further detail about the type of effect is set out in the text of Appendix SV-001-000.

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CD	Committed Development. The value in brackets in the number of impacts represented column is the value with the committed development.
G	(G1)Theatres, large auditoria and concert halls, (G2) Sound recording and broadcast studios, (G3) Places of meeting for religious worship, courts, cinemas, lecture theatres, museums and small auditoria or halls, (G4) Schools, colleges, hospitals, hotels and libraries, and (G5) Offices and general commercial premises
H	High existing ambient sound level. Defined as $>65\text{dB}_{\text{Aeq, day}}$ and/or $>55\text{dB}_{\text{Aeq, night}}$
L	Low existing ambient sound level. Defined as $<42\text{dB}_{\text{Aeq, day}}$ and/or $<32\text{dB}_{\text{Aeq, night}}$
LD	Landscape receptor
NA	Generally no adverse effect
NI	The receptor is predicted to qualify for mitigation, which shall be provided to the specification defined in the Noise Insulation (Railways and other Guided Rail Systems) Regulations 1996
R	Residential
RM	Residential mooring
S	Significant adverse effect
U	Unacceptable adverse effect
#	A change of 3dB or greater has been identified however, the assessment methodology only defines an impact where the absolute sound level from the Proposed Scheme is greater or equal to 50 dB $L_{\text{pAeq, 23:00} - 07:00}$ during the daytime or 40 dB $L_{\text{pAeq, 07:00} - 23:00}$ at night. At the receptor denoted the absolute level condition is not met and therefore no impact is identified.
~	The forecast adverse effects are not considered to be significant on a community basis (further information on methodology is provided in Volume 5: Appendix SV-001-000)..
\$	A change of 3dB or greater has been identified however, the impact methodology for non-residential receptors includes a screening criteria for G3 building use of 50 dB $L_{\text{pAeq, 07:00} - 23:00}$, for G4 building use 55 dB $L_{\text{pAeq, 07:00} - 23:00}$ and 45 dB $L_{\text{pAeq, 23:00} - 07:00}$, for G5 building use 55 dB $L_{\text{pAeq, 07:00} - 23:00}$. At the receptor denoted the screening criteria is not met and therefore no impact is identified. Further information is provided in Volume 5: Appendix SV-001-000.
^	The impact methodology has either identified an impact at a receptor which based upon further qualitative information does not gives rise to a significant effect. Further information is provided at the end of this Appendix.

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Table 3: Operational airborne sound level, noise impacts and effects

Assessment Location		Impact criteria										Significance criteria								Significant effect
ID	Area represented	Proposed Scheme only (Year 15 traffic)			Do nothing (Opening year baseline)			Do something (Opening year baseline + Year 15 traffic) ****		Change		Type of effect	Number of impacts represented	Type of receptor	Receptor design	Existing environment	Unique feature	Combined impact	Mitigation of effect	
		Day *	Night **	Max ***	Day *	Night **	Max ***	Day *	Night **	Day *	Night **									
100887	Unnamed Road, Coleshill	51	42	66/69	64	58	63	64	58	0	0	A	1	R	T	H	-	-	-	
101811	South Drive, Coleshill	52	42	70/73	56	54	51	57	54	2	0	A	1	R	T	-	-	-	-	
102917	Rose Road, Coleshill	45	36	61/63	57	51	69	57	51	0	0	NA	41	R	T	-	-	-	-	
103082	Norton Road, Coleshill	49	40	64/67	58	53	61	58	53	1	0	A	20	R	T	-	-	-	-	
110175	Auckland Drive, Birmingham	39	30	57/59	64	62	75	64	62	0	0	NA	19	R	T	H	-	-	-	
110201	Auckland Drive, Birmingham	40	31	59/60	62	62	75	62	62	0	0	NA	8	R	T	H	-	-	-	
110247	Red Wing Walk, Birmingham	40	31	59/61	62	62	75	62	62	0	0	NA	18	R	T	H	-	-	-	
123472	Gilson Drive, Coleshill	58	48	74/77	62	60	62	63	60	2	0	A	4	R	T	H	-	-	-	
123516	Gilson Drive, Coleshill	57	47	77/79	60	58	58	62	58	2	0	A	6	R	T	H	-	-	-	
124210	Stonebridge Road, Coleshill	63	55	64/67	74	67	80	74	67	0	0	A	1	R	T	H	-	-	-	
124677	Stonebridge Road, Coleshill	51	42	65/68	66	60	78	66	60	0	0	A	37	R	T	H	-	-	-	
124748	Hall Walk, Coleshill	49	40	66/68	62	56	76	62	56	0	0	A	34	R	T	H	-	-	-	
124821	Stonebridge Road, Coleshill	51	42	67/70	65	57	60	65	57	0	0	A	35	R	T	H	-	-	-	
124879	Springfields, Coleshill	47	38	62/65	60	54	72	60	54	0	0	NA	90	R	T	-	-	-	-	
124910	Stonebridge Road, Coleshill	53	45	69/72	73	68	77	73	68	0	0	A	1	R	T	H	-	-	-	
124940	Lawnsdale Close, Coleshill	54	45	70/72	65	57	60	66	57	0	0	A	20	R	T	H	-	-	-	
125027	Birmingham Road, Coleshill	53	44	68/71	59	53	75	60	53	1	0	A	4	R	T	-	-	-	-	
125076	Parkfield Road, Coleshill	48	39	64/66	61	57	64	62	57	0	0	NA	6	R	T	H	-	-	-	
125248	Birmingham Road, Coleshill	53	44	68/71	65	57	60	66	57	0	0	A	3	R	T	H	-	-	-	

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Assessment Location		Impact criteria										Significance criteria								Significant effect
ID	Area represented	Proposed Scheme only (Year 15 traffic)			Do nothing (Opening year baseline)			Do something (Opening year baseline + Year 15 traffic) ****		Change		Type of effect	Number of impacts represented	Type of receptor	Receptor design	Existing environment	Unique feature	Combined impact	Mitigation of effect	
		Day *	Night **	Max ***	Day *	Night **	Max ***	Day *	Night **	Day *	Night **									
125255	Chelmsley Avenue, Coleshill	49	40	64/67	61	57	64	62	57	0	0	A	45	R	T	H	-	-	-	
125368	Wingfield Road, Coleshill	46	37	64/67	59	55	66	60	55	0	0	NA	71	R	T	H	-	-	-	
125488	Digby Road, Coleshill	54	45	67/70	61	57	64	62	57	1	0	A	34	R	T	H	-	-	-	
125530	Digby Road, Coleshill	51	41	66/69	67	61	73	67	61	0	0	A	64	R	T	H	-	-	-	
125685	Wingfield Road, Coleshill	48	38	64/67	57	53	66	58	53	0	0	NA	1	R	T	-	-	-	-	
125722	Wall Avenue, Coleshill	49	40	64/67	55	55	60	56	55	1	0	A	54	R	T	H	-	-	-	
125802	Wingfield Road, Coleshill	49	40	66/69	61	57	64	62	57	0	0	A	22	R	T	H	-	-	-	
125872	Digby Road, Coleshill	53	44	67/70	67	61	73	67	61	0	0	A	27	R	T	H	-	-	-	
126150	Green Lane, Coleshill	48	39	62/65	57	53	58	58	53	0	0	NA	43	R	T	-	-	-	-	
126285	Castle Drive, Coleshill	46	37	60/63	57	54	62	57	54	0	0	NA	43	R	T	-	-	-	-	
126386	Stonebridge Road, Coleshill	51	42	66/69	65	57	60	65	57	0	0	A	16	R	T	H	-	-	-	
126717	Birmingham Road, Coleshill	67	61	82/84	65	61	77	67	61	2	0	S	3	R	T	H	-	-	NI	OSV19-D01
126837	Wingfield Road, Coleshill	52	42	66/69	60	57	68	60	57	1	0	A	26	R	T	H	-	-	-	
127026	High Street, Coleshill	48	39	63/66	61	57	64	62	57	0	0	NA	43	R	T	H	-	-	-	
127102	High Street, Coleshill	43	34	57/60	67	62	79	67	62	0	0	NA	57	R	T	H	-	-	-	
127157	Penns Lane, Coleshill	43	33	57/60	52	47	69	52	47	0	0	NA	41	R	T	-	-	-	-	
127299	Ravenswood Hill, Coleshill	52	42	66/69	59	53	75	60	53	1	0	A	63	R	T	-	-	-	-	
127465	High Brink Road, Coleshill	41	31	55/58	59	54	64	59	54	0	0	NA	81	R	T	-	-	-	-	
127569	Duncombe Green, Coleshill	55	45	70/73	64	59	68	64	59	1	0	A	49	R	T	H	-	-	-	
127648	High Brink Road, Coleshill	45	36	60/62	55	50	56	55	50	0	0	NA	64	R	T	-	-	-	-	
127852	Wood Close, Coleshill	42	33	56/59	52	47	69	52	47	0	0	NA	45	R	T	-	-	-	-	

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Assessment Location		Impact criteria										Significance criteria								Significant effect
ID	Area represented	Proposed Scheme only (Year 15 traffic)			Do nothing (Opening year baseline)			Do something (Opening year baseline + Year 15 traffic) ****		Change		Type of effect	Number of impacts represented	Type of receptor	Receptor design	Existing environment	Unique feature	Combined impact	Mitigation of effect	
		Day *	Night **	Max ***	Day *	Night **	Max ***	Day *	Night **	Day *	Night **									
128055	High Brink Road, Coleshill	52	43	68/71	63	58	66	63	58	0	0	A	37	R	T	H	-	-	-	
128147	Prossers Walk, Coleshill	45	35	60/63	67	62	79	67	62	0	0	NA	84	R	T	H	-	-	-	
128186	Old Mill Road, Coleshill	47	38	62/65	55	50	56	55	50	1	0	NA	42	R	T	-	-	-	-	
128494	Lichfield Road, Coleshill	48	39	65/68	61	55	73	61	55	0	0	NA	18	R	T	H	-	-	-	
128508	Doris Road, Coleshill	43	34	60/62	59	51	56	59	51	0	0	NA	60	R	T	-	-	-	-	
128785	Doris Road, Coleshill	46	36	62/65	60	54	72	60	54	0	0	NA	37	R	T	-	-	-	-	
128828	Lichfield Road, Coleshill	47	37	62/65	64	61	79	64	61	0	0	NA	31	R	T	H	-	-	-	
128960	Lichfield Road, Coleshill	50	41	65/68	62	59	65	62	59	0	0	A	1	R	T	H	-	-	-	
129075	Norton Road, Coleshill	42	32	58/61	57	52	65	58	52	0	0	NA	30	R	T	-	-	-	-	
129230	Ennersdale Road, Coleshill	41	31	54/57	55	52	65	56	52	0	0	NA	42	R	T	-	-	-	-	
129369	Gilson Road, Coleshill	45	35	60/62	66	55	58	66	55	0	0	NA	5	R	T	H	-	-	-	
129547	Parkfield Road, Coleshill	50	41	64/67	61	55	73	62	55	0	0	A	35	R	T	H	-	-	-	
129852	High Street, Coleshill	44	35	58/61	55	51	62	56	51	0	0	NA	38	R	T	-	-	-	-	
131458	Roman Way, Coleshill	45	36	62/64	57	53	64	57	53	0	0	NA	2	R	T	-	-	-	-	
131741	Ennersdale Road, Coleshill	41	32	53/56	55	52	65	56	52	0	0	NA	58	R	T	-	-	-	-	
136661	Birmingham Road, Water Orton	45	38	55/57	68	57	77	68	57	0	0	NA	2	R	T	H	-	-	-	
136779	Alvis Walk, Birmingham	42	35	55/56	61	54	63	61	54	0	0	NA	32	R	T	-	-	-	-	
137393	Marcos Drive, Birmingham	38	30	54/55	61	59	62	61	59	0	0	NA	41	R	T	H	-	-	-	
137517	Alvis Walk, Birmingham	41	34	55/56	61	59	62	61	59	0	0	NA	32	R	T	H	-	-	-	
137618	Alvis Walk, Birmingham	42	35	56/58	61	55	63	61	55	0	0	NA	13	R	T	H	-	-	-	
137633	Lanchester Way,	42	34	58/59	61	55	63	61	55	0	0	NA	26	R	T	H	-	-	-	

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		Day *	Night **	Max ***	Day *	Night **	Max ***	Day *	Night **	Day *	Night **									
	Birmingham																			
137672	Lanchester Way, Birmingham	42	34	60/61	67	57	66	67	57	0	0	NA	25	R	T	H	-	-	-	
137690	Rover Drive, Castle Bromwich	38	29	57/59	61	59	62	61	59	0	0	NA	22	R	T	H	-	-	-	
137708	Rover Drive, Birmingham	39	31	57/58	61	59	62	61	59	0	0	NA	55	R	T	H	-	-	-	
137834	Rover Drive, Birmingham	37	29	55/57	61	59	62	61	59	0	0	NA	54	R	T	H	-	-	-	
138204	Cowley Close, Birmingham	40	31	58/60	61	59	62	61	59	0	0	NA	56	R	T	H	-	-	-	
138225	Elva Croft, Birmingham	40	31	59/60	61	59	62	61	59	0	0	NA	18	R	T	H	-	-	-	
138301	Lanchester Way, Birmingham	43	34	61/63	67	57	66	67	57	0	0	NA	18	R	T	H	-	-	-	
138363	Humber Grove, Birmingham	43	34	63/64	66	57	67	66	57	0	0	NA	16	R	T	H	-	-	-	
138398	Rover Drive, Birmingham	41	32	61/62	61	59	62	61	59	0	0	NA	34	R	T	H	-	-	-	
138437	Triumph Walk, Birmingham	42	33	60/62	61	59	62	61	59	0	0	NA	34	R	T	H	-	-	-	
138485	Morgan Grove, Birmingham	39	30	58/59	59	57	60	59	57	0	0	NA	62	R	T	H	-	-	-	
139373	Lanchester Way, Birmingham	40	33	50/51	61	54	63	61	54	0	0	NA	50	R	T	-	-	-	-	
139659	Mytton Road, Water Orton	40	33	53/55	67	59	82	67	59	0	0	NA	9	R	T	H	-	-	-	
139772	Vicarage Lane, Water Orton	43	34	64/66	60	56	62	60	56	0	0	NA	6	R	T	H	-	-	-	
139831	Vicarage Lane, Water Orton	43	34	63/64	60	56	62	60	56	0	0	NA	8	R	T	H	-	-	-	
139889	Vicarage Lane, Water Orton	43	34	62/63	50	48	57	51	48	1	0	NA	9	R	T	-	-	-	-	
139929	Attleboro Lane, Water Orton	41	31	59/61	54	50	59	54	50	0	0	NA	9	R	T	-	-	-	-	

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		Day *	Night **	Max ***	Day *	Night **	Max ***	Day *	Night **	Day *	Night **									
140067	Vicarage Lane, Water Orton	41	32	60/62	57	53	62	57	53	0	0	NA	29	R	T	-	-	-	-	
140133	Weland Close, Water Orton	41	33	58/60	52	49	52	52	49	0	0	NA	53	R	T	-	-	-	-	
140180	Vicarage Lane, Water Orton	43	34	66/67	55	51	57	55	51	0	0	NA	20	R	T	-	-	-	-	
140403	Vicarage Lane, Water Orton	42	33	64/65	54	50	56	54	50	0	0	NA	26	R	T	-	-	-	-	
140636	Plank Lane, Water Orton	38	30	57/58	52	48	55	52	48	0	0	NA	7	R	T	-	-	-	-	
140857	St. Peters Close, Water Orton	40	31	57/58	53	50	54	53	50	0	0	NA	25	R	T	-	-	-	-	
141182	St. Blaise Avenue, Water Orton	40	31	57/58	54	50	56	54	50	0	0	NA	20	R	T	-	-	-	-	
141246	Attleboro Lane, Water Orton	43	34	61/62	55	53	56	55	53	0	0	NA	7	R	T	-	-	-	-	
141274	Birmingham Road, Water Orton	38	30	58/59	68	62	82	68	62	0	0	NA	14	R	T	H	-	-	-	
141354	Plank Lane, Water Orton	37	29	57/58	60	56	76	60	56	0	0	NA	6	R	T	H	-	-	-	
141408	Rover Drive, Birmingham	42	33	63/64	66	57	67	66	57	0	0	NA	21	R	T	H	-	-	-	
141456	Triumph Walk, Birmingham	43	34	62/63	66	57	67	66	57	0	0	NA	43	R	T	H	-	-	-	
141697	Wolseley Close, Birmingham	41	31	60/62	59	57	60	59	57	0	0	NA	46	R	T	H	-	-	-	
141762	Lanchester Way, Birmingham	43	33	63/64	65	60	67	65	60	0	0	NA	57	R	T	H	-	-	-	
141950	Wolseley Close, Birmingham	39	30	57/59	59	57	60	59	57	0	0	NA	31	R	T	H	-	-	-	
141965	Morgan Grove, Birmingham	38	29	59/60	59	57	60	59	57	0	0	NA	19	R	T	H	-	-	-	
142052	Lanchester Way, Birmingham	41	31	60/61	64	62	75	64	62	0	0	NA	45	R	T	H	-	-	-	
142895	Birmingham Road, Water Orton	38	30	54/56	68	62	82	68	62	0	0	NA	13	R	T	H	-	-	-	

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		Day *	Night **	Max ***	Day *	Night **	Max ***	Day *	Night **	Day *	Night **									
143029	Birmingham Road, Water Orton	36	27	55/56	65	62	82	65	62	0	0	NA	16	R	T	H	-	-	-	
143824	Smiths Way, Water Orton	35	26	51/53	64	58	80	64	58	0	0	NA	21	R	T	H	-	-	-	
146143	Openfield Croft, Water Orton	42	33	63/64	66	62	78	66	62	0	0	NA	12	R	T	H	-	-	-	
146211	Coleshill Road, Water Orton	41	32	59/60	66	62	78	66	62	0	0	NA	23	R	T	H	-	-	-	
146284	St. Blaise Avenue, Water Orton	41	32	64/65	54	50	56	54	50	0	0	NA	18	R	T	-	-	-	-	
146312	St. Blaise Avenue, Water Orton	42	33	64/65	54	50	56	54	50	0	0	NA	13	R	T	-	-	-	-	
146361	Vicarage Lane, Water Orton	42	33	61/62	54	50	56	54	50	0	0	NA	21	R	T	-	-	-	-	
146424	Coleshill Road, Water Orton	42	33	64/65	63	62	78	63	62	0	0	NA	10	R	T	H	-	-	-	
146469	Coleshill Road, Water Orton	42	33	65/66	47	47	57	48	47	1	0	NA	10	R	T	-	-	-	-	
146557	Watton Lane, Water Orton	42	33	59/61	59	53	68	59	53	0	0	NA	14	R	T	-	-	-	-	
146620	Watton Lane, Water Orton	44	35	67/68	70	64	80	70	64	0	0	NA	11	R	T	H	-	-	-	
146638	Watton Lane, Water Orton	45	36	68/69	70	64	80	70	64	0	0	NA	4	R	T	H	-	-	-	
146728	Coleshill Road, Water Orton	44	35	67/68	53	53	63	54	53	0	0	NA	16	R	T	-	-	-	-	
146783	Watton Lane, Water Orton	43	35	66/67	54	51	57	54	51	0	0	NA	23	R	T	-	-	-	-	
146840	Gilson Road, Coleshill	53	43	66/67	68	65	70	68	65	0	0	A	4	R	T	H	-	-	-	
146872	Gilson Road, Coleshill	58	49	75/78	62	59	64	63	60	1	0	A	4	R	T	H	-	-	-	
146917	Gilson Road, Coleshill	63	60	65/68	64	61	68	63	60	-1	-1	A	5	R	T	H	-	-	-	
146954	Gilson Road, Coleshill	58	54	65/69	60	59	71	62	60	2	1	A	3	R	T	H	-	-	-	
146974	Gilson Road, Coleshill	61	58	70/74	61	60	73	61	58	0	-2	A	4	R	T	H	-	-	-	

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		Day *	Night **	Max ***	Day *	Night **	Max ***	Day *	Night **	Day *	Night **									
147008	Meadowbank Drive, Coleshill	62	52	75/80	62	59	64	65	60	3	1	A	9	R	T	H	-	Y	-	OSV19-C01
147038	New Road, Water Orton	39	30	58/59	66	59	78	66	59	0	0	NA	10	R	T	H	-	-	-	
147174	Marsh Lane, Water Orton	45	36	60/62	63	62	70	63	62	0	0	NA	6	R	T	H	-	-	-	
147318	George Road, Water Orton	47	38	64/66	68	64	80	68	64	0	0	NA	10	R	T	H	-	-	-	
147332	Maud Road, Water Orton	46	37	62/64	68	64	80	68	64	0	0	NA	6	R	T	H	-	-	-	
147380	Maud Road, Water Orton	47	38	63/65	62	61	74	62	61	0	0	NA	6	R	T	H	-	-	-	
147389	George Road, Water Orton	45	36	64/65	57	54	63	57	54	0	0	NA	10	R	T	-	-	-	-	
147442	George Road, Water Orton	43	34	62/64	54	51	57	54	51	0	0	NA	19	R	T	-	-	-	-	
147501	Maud Road, Water Orton	46	37	62/64	56	53	61	56	53	0	0	NA	21	R	T	-	-	-	-	
147577	George Road, Water Orton	44	35	61/63	54	51	57	54	51	0	0	NA	55	R	T	-	-	-	-	
147659	Maud Road, Water Orton	46	37	66/68	60	57	63	60	57	0	0	NA	10	R	T	H	-	-	-	
147698	Hollyhurst, Water Orton	43	34	62/63	54	51	57	54	51	0	0	NA	20	R	T	-	-	-	-	
147739	Park Grove, Water Orton	43	34	60/62	53	50	55	53	50	0	0	NA	16	R	T	-	-	-	-	
147805	Overton Drive, Water Orton	43	34	58/60	59	50	57	59	50	0	0	NA	20	R	T	-	-	-	-	
147930	Salisbury Drive, Water Orton	40	31	54/56	53	44	51	53	45	0	0	NA	35	R	T	-	-	-	-	
148027	Overton Drive, Water Orton	40	31	56/57	53	44	51	53	45	0	0	NA	30	R	T	-	-	-	-	
149230	Gilson Road, Coleshill	52	43	69/72	66	55	58	66	55	0	0	A	1	R	T	H	-	-	-	
149268	Lichfield Road, Coleshill	52	43	67/70	66	55	58	66	55	0	0	A	8	R	T	H	-	-	-	
149292	Norton Road, Coleshill	47	38	62/64	58	53	54	58	54	0	0	NA	19	R	T	-	-	-	-	
149315	Norton Road, Coleshill	49	40	64/67	57	54	61	58	55	1	0	A	9	R	T	-	-	-	-	
149507	Arden Croft, Coleshill	43	34	56/59	56	53	60	56	53	0	0	NA	44	R	T	-	-	-	-	

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		Day *	Night **	Max ***	Day *	Night **	Max ***	Day *	Night **	Day *	Night **									
149550	Norton Road, Coleshill	44	35	58/60	55	50	53	55	51	0	0	NA	38	R	T	-	-	-	-	
149648	Bateman Road, Coleshill	42	33	56/58	55	52	65	56	52	0	0	NA	46	R	T	-	-	-	-	
149951	Tiberius Close, Coleshill	47	38	61/63	54	51	60	55	52	1	0	NA	40	R	T	-	-	-	-	
150059	Trajan Hill, Coleshill	48	39	60/63	56	53	59	56	53	1	0	NA	22	R	T	-	-	-	-	
150077	Lichfield Road, Coleshill	50	41	65/68	53	50	59	55	50	2	1	A	15	R	T	-	-	-	-	
150225	Temple Way, Coleshill	48	39	58/61	65	60	75	65	60	0	0	NA	21	R	T	H	-	-	-	
150270	Brutus Drive, Coleshill	49	40	60/62	66	61	76	66	61	0	0	A	42	R	T	H	-	-	-	
150547	Julius Drive, Coleshill	43	34	56/59	55	52	58	55	52	0	0	NA	52	R	T	-	-	-	-	
150633	Temple Way, Coleshill	45	35	58/61	57	54	62	57	54	0	0	NA	46	R	T	-	-	-	-	
150711	Constantine Lane, Coleshill	46	36	59/61	56	51	61	56	51	0	0	NA	48	R	T	-	-	-	-	
150789	Temple Way, Coleshill	47	38	58/61	56	51	61	56	51	1	0	NA	28	R	T	-	-	-	-	
151087	Station Road, Coleshill	41	32	56/59	62	59	63	62	59	0	0	NA	1	R	T	H	-	-	-	
151656	Roman Way, Coleshill	50	40	65/67	66	62	70	66	62	0	0	A	2	R	T	H	-	-	-	
151974	Lichfield Road, Coleshill	55	46	73/75	56	53	59	58	54	3	1	A	9	R	T	-	-	-	-	^
152014	Lichfield Road, Coleshill	57	48	73/75	56	53	59	59	54	4	1	A	12	R	T	-	-	-	-	^
152035	Gorsey Way, Coleshill	57	48	72/74	56	53	59	60	54	4	1	A	6	R	T	-	-	-	-	^
152426	Imperial Rise, Coleshill	53	43	66/68	72	67	82	72	67	0	0	A	22	R	T	H	-	-	-	
152447	Imperial Rise, Coleshill	52	42	66/69	55	45	63	57	47	2	2	A	49	R	T	-	-	-	-	
152464	Lichfield Road, Coleshill	55	45	74/77	56	53	59	58	53	3	1	A	6	R	T	-	-	-	-	^
154000	Station Road, Coleshill	40	31	52/55	59	51	56	59	51	0	0	NA	1	R	T	-	-	-	-	
154074	Roman Way, Coleshill	43	33	57/60	52	49	52	53	49	0	0	NA	1	R	T	-	-	-	-	

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		Day *	Night **	Max ***	Day *	Night **	Max ***	Day *	Night **	Day *	Night **									
183917	Stonebridge Road, Coleshill	59	51	60/62	74	67	80	74	67	0	0	A	1	R	T	H	-	-	-	
184560	Coventry Road, Coleshill	46	37	60/63	60	54	72	60	54	0	0	NA	13	R	T	-	-	-	-	
184849	Coventry Road, Coleshill	49	40	66/68	66	61	68	66	61	0	0	A	22	R	T	H	-	-	-	
185489	Burman Drive, Coleshill	48	39	62/65	60	54	72	60	54	0	0	NA	91	R	T	-	-	-	-	
701084	South Drive, Coleshill	53	43	71/73	56	54	51	57	54	2	0	A	1	R	T	-	-	-	-	
701085	South Drive, Coleshill	49	39	68/70	56	54	51	56	54	1	0	NA	2	R	T	-	-	-	-	
701086	Coventry Road, Coleshill	44	35	57/60	60	54	72	60	54	0	0	NA	38	R	T	-	-	-	-	
701087	Coventry Road, Coleshill	45	35	60/62	60	54	72	60	54	0	0	NA	35	R	T	-	-	-	-	
701088	Coventry Road, Coleshill	44	35	59/62	60	54	72	60	54	0	0	NA	22	R	T	-	-	-	-	
701089	Wingfield Road, Coleshill	46	37	59/62	60	54	72	60	54	0	0	NA	8	R	T	-	-	-	-	
100887	Woodlands Cemetery and Crematorium (Crematorium)	51	42	66/69	64	58	63	64	58	0	0	B	1	G3	T	-	-	-	-	
101811	Coleshill Manor Office Campus, South Drive (Office)	52	42	70/73	56	54	51	57	54	2	0	B	6	G5	T	-	-	-	-	
103082	High Meadow Infant School, (Infant School)	49	40	64/67	58	53	61	58	53	1	0	B	1	G4	T	-	-	-	-	
124229	Unnamed Road (office)	60	51	78/81	77	70	86	77	70	0	0	B	1	G5	T	H	-	-	-	
125027	Fire Station, Birmingham Road (Fire Station)	53	44	68/71	59	53	75	60	53	1	0	B	1	G4	T	-	-	-	-	
125027	Park Road, Coleshill (Leisure Centre)	53	44	68/71	59	53	75	60	53	1	0	B	1	G5	T	-	-	-	-	
125076	High Street, Coleshill, (British Legion Club)	48	39	64/66	61	57	64	62	57	0	0	B	1	G5	T	-	-	-	-	

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		Day *	Night **	Max ***	Day *	Night **	Max ***	Day *	Night **	Day *	Night **									
125248	Police Station, Birmingham Road (Police Services)	53	44	68/71	65	57	60	66	57	0	0	B	1	G4	T	H	-	-	-	
125255	Parkfield Road, Coleshill, (General Commercial)	49	40	64/67	61	57	64	62	57	0	0	B	3	G5	T	-	-	-	-	
125488	Community Centre, Digby Road (Community Centre)	54	45	67/70	61	57	64	62	57	1	0	B	1	G3	T	-	-	-	-	
125685	Coleshill C of E Primary School (Primary School)	48	38	64/67	57	53	66	58	53	0	0	B	1	G4	T	-	-	-	-	
125722	Community Centre, Hudson Avenue (Community Centre)	49	40	64/67	55	55	60	56	55	1	0	B	1	G3	T	-	-	-	-	
127026	High Street, Coleshill, (Estate Agency)	48	39	63/66	61	57	64	62	57	0	0	B	1	G5	T	-	-	-	-	
127026	High Street, Coleshill, (General Commercial)	48	39	63/66	61	57	64	62	57	0	0	B	7	G5	T	-	-	-	-	
127026	Jenny Wren Gallery, High Street, Coleshill (Art Gallery)	48	39	63/66	61	57	64	62	57	0	0	B	1	G3	T	-	-	-	-	
127026	Coleshill Dental Centre, High Street (Dental Surgery)	48	39	63/66	61	57	64	62	57	0	0	B	1	G4	T	-	-	-	-	
127026	Coleshill Library, Parkfield Road, Coleshill (Library)	48	39	63/66	61	57	64	62	57	0	0	B	1	G5	T	-	-	-	-	
127026	Parkfield Road, Coleshill, (Local Government Office)	48	39	63/66	61	57	64	62	57	0	0	B	1	G5	T	-	-	-	-	
127026	Swan Hotel, High Street, Coleshill (Hotel)	48	39	63/66	61	57	64	62	57	0	0	B	1	G4	T	-	-	-	-	
127026	High Street, Coleshill,	48	39	63/66	61	57	64	62	57	0	0	B	12	G5	T	-	-	-	-	

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Assessment Location		Impact criteria										Significance criteria								Significant effect
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		Day *	Night **	Max ***	Day *	Night **	Max ***	Day *	Night **	Day *	Night **									
	(Office)																			
127026	Fairview, High Street, Coleshill, (Office)	48	39	63/66	61	57	64	62	57	0	0	B	1	G5	T	-	-	-	-	
127026	The Courtyard, High Street, (General Commercial)	48	39	63/66	61	57	64	62	57	0	0	B	1	G5	T	-	-	-	-	
127102	High Street, Coleshill, (General Commercial)	43	34	57/60	67	62	79	67	62	0	0	B	4	G5	T	H	-	-	-	
127465	Ravenswood Hill, Coleshill, (General Commercial)	41	31	55/58	59	54	64	59	54	0	0	B	1	G5	T	-	-	-	-	
128147	Chestnut Grove, Coleshill, (Engineering Works)	45	35	60/63	67	62	79	67	62	0	0	B	1	G5	T	H	-	-	-	
128186	Bridge View, High Street, (General Commercial)	47	38	62/65	55	50	56	55	50	1	0	B	1	G5	T	-	-	-	-	
128186	Bridge View, High Street, (Employment Agency)	47	38	62/65	55	50	56	55	50	1	0	B	1	G5	T	-	-	-	-	
128186	Bridge View, High Street, Coleshill, (Shopping)	47	38	62/65	55	50	56	55	50	1	0	B	1	G5	T	-	-	-	-	
128828	Lichfield Road, Coleshill, (Shopping)	47	37	62/65	64	61	79	64	61	0	0	B	1	G5	T	H	-	-	-	
129852	High Street, Coleshill, (Restaurant)	44	35	58/61	55	51	62	56	51	0	0	B	8	G5	T	-	-	-	-	
129852	The Old Market Hall, Church Hill, Coleshill, (Office)	44	35	58/61	55	51	62	56	51	0	0	B	1	G5	T	-	-	-	-	
130518	Station Road, Coleshill, (General Commercial)	46	36	64/65	62	59	63	62	59	0	0	B	6	G5	T	-	-	-	-	

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Assessment Location		Impact criteria										Significance criteria								Significant effect
ID	Area represented	Proposed Scheme only (Year 15 traffic)			Do nothing (Opening year baseline)			Do something (Opening year baseline + Year 15 traffic) ****		Change		Type of effect	Number of impacts represented	Type of receptor	Receptor design	Existing environment	Unique feature	Combined impact	Mitigation of effect	
		Day *	Night **	Max ***	Day *	Night **	Max ***	Day *	Night **	Day *	Night **									
130518	Norton Arms Inn, Station Road, Coleshill (Inn)	46	36	64/65	62	59	63	62	59	0	0	B	1	G5	T	-	-	-	-	
130843	Highway Point, Coleshill (General Commercial)	61	52	76/79	55	54	65	62	56	7	2	B	1	G5	T	-	-	-	-	OSV19-No1
130843	Bromwich Court, Gorsey Lane (General Commercial)	61	52	76/79	55	54	65	62	56	7	2	B	4	G5	T	-	-	-	-	OSV19-No1
130991	Gorsey Lane, Coleshill (General Commercial)	55	45	72/75	53	52	61	57	53	4	1	B	1	G5	T	-	-	-	-	\$
130991	The Lodge, Gorsey Lane, Coleshill (Office)	55	45	72/75	53	52	61	57	53	4	1	B	1	G5	T	-	-	-	-	\$
130991	Old House, Gorsey Lane (General Commercial)	55	45	72/75	53	52	61	57	53	4	1	B	2	G5	T	-	-	-	-	\$
130991	Gorsey Lane, Coleshill (General Commercial)	55	45	72/75	53	52	61	57	53	4	1	B	3	G5	T	-	-	-	-	\$
130991	Gorsey Lane, Coleshill (General Commercial)	55	45	72/75	53	52	61	57	53	4	1	B	1	G5	T	-	-	-	-	\$
131458	Forge Mills Park, Station Road (General Commercial)	45	36	62/64	57	53	64	57	53	0	0	B	1	G5	T	-	-	-	-	
131458	Coleshill Industrial Estate, Station Road (Office)	45	36	62/64	57	53	64	57	53	0	0	B	24	G5	T	-	-	-	-	
131458	Station Road Industrial Estate (General Commercial)	45	36	62/64	57	53	64	57	53	0	0	B	1	G5	T	-	-	-	-	
131458	Station Road, Coleshill (Office)	45	36	62/64	57	53	64	57	53	0	0	B	1	G5	T	-	-	-	-	
131458	Station Road Industrial	45	36	62/64	57	53	64	57	53	0	0	B	1	G5	T	-	-	-	-	

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Assessment Location		Impact criteria										Significance criteria								Significant effect
ID	Area represented	Proposed Scheme only (Year 15 traffic)			Do nothing (Opening year baseline)			Do something (Opening year baseline + Year 15 traffic) ****		Change		Type of effect	Number of impacts represented	Type of receptor	Receptor design	Existing environment	Unique feature	Combined impact	Mitigation of effect	
		Day *	Night **	Max ***	Day *	Night **	Max ***	Day *	Night **	Day *	Night **									
	Estate (General Commercial)																			
131458	The Courtyard, Gorsey Lane (Office)	45	36	62/64	57	53	64	57	53	0	0	B	5	G5	T	-	-	-	-	
131458	Forge Mills Park, Station Road (General Commercial)	45	36	62/64	57	53	64	57	53	0	0	B	1	G5	T	-	-	-	-	
131458	Station Road Industrial Estate (General Commercial)	45	36	62/64	57	53	64	57	53	0	0	B	2	G5	T	-	-	-	-	
131458	Forge Mills Park, Station Road (General Commercial)	45	36	62/64	57	53	64	57	53	0	0	B	1	G5	T	-	-	-	-	
131741	Community Centre, Temple Way, Coleshill, (Community Centre)	41	32	53/56	55	52	65	56	52	0	0	B	2	G3	T	-	-	-	-	
132786	Jack O Watton Industrial Estate (General Commercial)	54	44	71/73	68	62	85	68	62	0	0	B	3	G5	T	H	-	-	-	
138485	Rover Drive, Birmingham, (General Commercial)	39	30	58/59	59	57	60	59	57	0	0	B	1	G5	T	-	-	-	-	
138485	Sunbeam Close, Birmingham (Hall)	39	30	58/59	59	57	60	59	57	0	0	B	1	G3	T	-	-	-	-	
139889	Water Orton Primary School, (Primary School)	43	34	62/63	50	48	57	51	48	1	0	B	1	G4	T	-	-	-	-	
146143	Coleshill Road, Water Orton (Mental Health Centre)	42	33	63/64	66	62	78	66	62	0	0	B	1	G4	T	H	-	-	-	
147174	Marsh Lane, Water Orton (General Commercial)	45	36	60/62	63	62	70	63	62	0	0	B	1	G5	T	H	-	-	-	
147501	Community Centre, Edward	46	37	62/64	56	53	61	56	53	0	0	B	1	G3	T	-	-	-	-	

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Assessment Location		Impact criteria										Significance criteria								Significant effect
ID	Area represented	Proposed Scheme only (Year 15 traffic)			Do nothing (Opening year baseline)			Do something (Opening year baseline + Year 15 traffic) ****		Change		Type of effect	Number of impacts represented	Type of receptor	Receptor design	Existing environment	Unique feature	Combined impact	Mitigation of effect	
		Day *	Night **	Max ***	Day *	Night **	Max ***	Day *	Night **	Day *	Night **									
	Road (Community Centre)																			
148102	Marsh Lane, Water Orton (General Commercial)	49	40	64/67	65	64	74	66	64	0	0	B	1	G5	T	H	-	-	-	
149230	Gromstock Country Hotel, Gilson Road (Hotel)	52	43	69/72	66	55	58	66	55	0	0	B	1	G4	T	H	-	-	-	
149268	Grimstock Hill, Lichfield Road, Coleshill, (Shopping)	52	43	67/70	66	55	58	66	55	0	0	B	1	G5	T	H	-	-	-	
149951	Norton Road, Coleshill, (General Commercial)	47	38	61/63	54	51	60	55	52	1	0	B	1	G5	T	-	-	-	-	
150225	Grimstock Hill, Lichfield Road, Coleshill, (General Commercial)	48	39	58/61	65	60	75	65	60	0	0	B	1	G5	T	H	-	-	-	
151087	Station Road Industrial Estate, Station Road, Coleshill, (Training)	41	32	56/59	62	59	63	62	59	0	0	B	2	G4	T	-	-	-	-	
151087	Station Road Industrial Estate (General Commercial)	41	32	56/59	62	59	63	62	59	0	0	B	2	G5	T	-	-	-	-	
151087	Coleshill Freight Terminal, Station Road (Office)	41	32	56/59	62	59	63	62	59	0	0	B	4	G5	T	-	-	-	-	
151087	Gorsey Lane, Coleshill (Café)	41	32	56/59	62	59	63	62	59	0	0	B	1	G5	T	-	-	-	-	
151087	Station Road, Coleshill (General Commercial)	41	32	56/59	62	59	63	62	59	0	0	B	2	G5	T	-	-	-	-	
151087	Guild Works, Gorsey Lane (General Commercial)	41	32	56/59	62	59	63	62	59	0	0	B	8	G5	T	-	-	-	-	
151656	Roman Way, Coleshill	50	40	65/67	66	62	70	66	62	0	0	B	8	G5	T	H	-	-	-	

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Assessment Location		Impact criteria										Significance criteria								Significant effect
ID	Area represented	Proposed Scheme only (Year 15 traffic)			Do nothing (Opening year baseline)			Do something (Opening year baseline + Year 15 traffic) ****		Change		Type of effect	Number of impacts represented	Type of receptor	Receptor design	Existing environment	Unique feature	Combined impact	Mitigation of effect	
		Day *	Night **	Max ***	Day *	Night **	Max ***	Day *	Night **	Day *	Night **									
	(Office)																			
151656	The Courtyard, Roman Way, Coleshill, (Office)	50	40	65/67	66	62	70	66	62	0	0	B	21	G5	T	H	-	-	-	
151656	Centurion Court, Roman Way (General Commercial)	50	40	65/67	66	62	70	66	62	0	0	B	1	G5	T	H	-	-	-	
151656	Perschamann House, Roman Way (General Commercial)	50	40	65/67	66	62	70	66	62	0	0	B	1	G5	T	H	-	-	-	
151756	Roman Way, Coleshill (General Commercial)	47	38	65/68	55	51	61	55	51	1	0	B	11	G5	T	-	-	-	-	
151756	Roman Park, Roman Way, (General Commercial)	47	38	65/68	55	51	61	55	51	1	0	B	1	G5	T	-	-	-	-	
151902	Roman Way, Coleshill (Office)	54	45	68/71	56	53	59	58	53	2	1	B	6	G5	T	-	-	-	-	
154000	Station Road Industrial Estate (General Commercial)	40	31	52/55	59	51	56	59	51	0	0	B	1	G5	T	-	-	-	-	
154000	Station Road Industrial Estate (General Commercial)	40	31	52/55	59	51	56	59	51	0	0	B	2	G5	T	-	-	-	-	
154000	Coleshill Trade Park, Station Road (General Commercial)	40	31	52/55	59	51	56	59	51	0	0	B	10	G5	T	-	-	-	-	
154000	Station Road Industrial Estate (General Commercial)	40	31	52/55	59	51	56	59	51	0	0	B	5	G5	T	-	-	-	-	
154074	Temple Court, Temple Way (General Commercial)	43	33	57/60	52	49	52	53	49	0	0	B	3	G5	T	-	-	-	-	
154074	Roman Park, Roman Way (General Commercial)	43	33	57/60	52	49	52	53	49	0	0	B	5	G5	T	-	-	-	-	

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Assessment Location		Impact criteria										Significance criteria								Significant effect
ID	Area represented	Proposed Scheme only (Year 15 traffic)			Do nothing (Opening year baseline)			Do something (Opening year baseline + Year 15 traffic) ****		Change		Type of effect	Number of impacts represented	Type of receptor	Receptor design	Existing environment	Unique feature	Combined impact	Mitigation of effect	
		Day *	Night **	Max ***	Day *	Night **	Max ***	Day *	Night **	Day *	Night **									
154074	Temple Way, Coleshill (Office)	43	33	57/60	52	49	52	53	49	0	0	B	2	G5	T	-	-	-	-	
185489	Coventry Road, Coleshill (Office)	48	39	62/65	60	54	72	60	54	0	0	B	1	G5	T	-	-	-	-	
187808	Station Road Industrial Estate, Coleshill (Office)	43	33	57/60	57	49	54	57	49	0	0	B	11	G5	T	-	-	-	-	
700641	Woodlands School, Packington Lane (School)	46	38	60/62	60	54	72	60	54	0	0	B	1	G4	T	-	-	-	-	
701084	Coleshill Manor Office Campus (Retail Warehouse)	53	43	71/73	56	54	51	57	54	2	0	B	1	G5	T	-	-	-	-	
701085	Coleshill Manor Office Campus (Office)	49	39	68/70	56	54	51	56	54	1	0	B	2	G5	T	-	-	-	-	
701085	Coleshill Manor Office Campus (Training)	49	39	68/70	56	54	51	56	54	1	0	B	1	G4	T	-	-	-	-	
701086	Coventry Road, Coleshill (General Commercial)	44	35	57/60	60	54	72	60	54	0	0	B	1	G5	T	-	-	-	-	
701089	Wingfield Road, Coleshill (General Commercial)	46	37	59/62	60	54	72	60	54	0	0	B	1	G5	T	-	-	-	-	
710921	Wheatsheaf Inn, Station Road, Coleshill (Inn)	45	36	60/63	64	61	79	64	61	0	0	B	1	G5	T	H	-	-	-	

Direct impact - Summary

4.3.8 The operational airborne noise impacts identified in Table 3 are summarised in Table 4.

Table 4: Summary of operational airborne noise impacts

Receptor	Number of impacts		
	Minor	Moderate	Major
Residential properties	42	0	0
Non-residential properties	0	5	0
Quiet areas	None	None	None

4.4 Assessment of impacts and effects

Residential receptors: direct effects –individual dwellings

4.4.2 Taking account of the avoidance and mitigation measures incorporated into the Proposed Scheme, the assessment has identified three residential buildings (1-3 New Cottages, Birmingham Road) represented by receptor reference 126717 (marked as OSV19-Do1 in Table 3), close to the Proposed Scheme, where noise would exceed the daytime trigger threshold set in the Regulations. It is therefore estimated that these buildings are likely to qualify for noise insulation under the Regulations. These dwellings are indicated on Volume 2: Map Book – Sound, noise and vibration, Map series SV-02.

4.4.3 The mitigation measures including noise insulation will reduce noise inside all dwellings such that it will not reach a level where it would significantly affect residents other than as described.

Residential receptors: direct effects –communities

4.4.4 Taking account of the envisaged mitigation, Map Series SV-02 (Volume 5, CFA19 Map Book) shows the long term 40dB² night-time sound level contour from the operation of trains on the Proposed Scheme and also due to sound from realigned or modified roads or existing railways. The extent of the 40dB night-time sound level contour is generally the same as, or slightly larger than, the 50dB daytime contour³. It is generally unlikely that there will be any adverse noise effects outside these contours.

² Defined as the equivalent continuous sound level from 23:00 to 07:00 or $L_{pAeq,night}$.

³ With the train flows described in the assumptions section of this CFA Report, the daytime sound level (defined as the equivalent continuous sound level from 07:00 to 23:00 or $L_{pAeq,day}$) from the Proposed Scheme would be approximately 10dB higher than the night-time sound level. The 40dB contour therefore indicates the distance from the Proposed Scheme at which the daytime sound level would be 50dB.

- 4.4.5 The mitigation measures in this area will avoid airborne noise adverse effects⁴ on the majority of receptors, and at the following communities:
- Chelmsley Wood;
 - Water Orton; and
 - The vast majority of Coleshill.
- 4.4.6 Above 40dB during the night and 50dB during the day the effect of noise is dependent on the baseline sound levels in that area and the change in sound level (magnitude of effect) brought about by the Proposed Scheme. The airborne noise impacts and effects forecast for the operation of the scheme are presented on Map Series SV-02 (Volume 5, CFA19 Map Book).
- 4.4.7 At Coleshill approximately 35 properties have been identified as being subject to a minor adverse noise effect. These effects are likely to be considered by the local community as an effect on the acoustic character of the area such that there is a perceived change in the quality of life. The level of noise exposure with the Proposed Scheme in operation is relatively low for an urban location already subject to Transport noises. Considering the impact on the noise amenity outside the dwellings, the number of impacts and the grouping of impacts, and the current baseline sound levels, the effects are not considered to be significant.
- 4.4.8 It should be noted that noise barriers providing mitigation to the Proposed Scheme will additionally provide mitigation to existing motorways in this study area. This potential reduction in road traffic noise has not been considered within this assessment.
- 4.4.9 The effects identified, from the change in noise levels, are likely to be considered by the local community as an effect on the acoustic character of the area such that there is a perceived change in the quality of life. These effects are considered to be significant when assessed on a community basis taking account of local context.
- 4.4.10 The direct adverse effects⁴ on the areas of the residential communities identified in Table 5 are considered to be significant.

Table 5: Direct adverse effects on residential communities and shared open areas that are considered significant on a community basis

Significant effect number (see Map series SV-02, Table 1 and 3)	Source of significant effect	Time of day	Location and details
OSV19-Co1	Airborne noise increase and vibration from new train services	Daytime and night-time	Approximately 10 dwellings in the vicinity of Meadowbank Drive and B4117 Gilson Road, closest to the Proposed Scheme. Forecast increases in sound from the railway are likely to cause a minor airborne noise adverse effect. A minor and minor ground-borne vibration adverse effect is also forecast at the very closest buildings. There are no shared open spaces identified as being adversely affected in this community area.

⁴ Information is provided in the emerging National Planning Practice Guidance – Noise <http://planningguidance.planningportal.gov.uk>, e.g. the table summarising the noise exposure hierarchy.

Residential receptors: indirect effects

- 4.4.11 The transport assessment presented in Volume 5: Appendix TR-001-000, has been used to identify those roads or railways within this study area where the alignment remains as at present, but a change in flow or composition is identified which is greater than the screening criteria defined in Volume 5: Appendix SV-001-000. No roads or railways which exceed the criteria defined in Volume 5: Appendix SV-001-000 have been identified in this study area.
- 4.4.12 The assessment of operational noise and vibration indicates that significant indirect effects on residential receptors are unlikely to occur in this area.

Non-residential receptors: direct effects

- 4.4.13 The assessment has identified airborne noise impacts at Bromwich Court and Highway Point, represented by receptor reference 130843.

Bromwich Court

- 4.4.14 Bromwich Court is an office development currently occupied by Willmott Dixon Limited. A moderate operational airborne noise impact has been identified based upon the change in the noise level outside this non-residential receptor. An assessment has been undertaken to determine if this impact would result in a significant effect at this non-residential receptor, using the significance criteria detailed in Volume 5: Appendix 001-000.
- 4.4.15 This receptor is located approximately 65m from the Proposed Scheme alignment. The building is a three storey office building, constructed of brick and fitted with double glazed windows, and it is believed that ventilation is provided by a combination of partial comfort cooling and opening the windows.
- 4.4.16 Bromwich Court offices are identified, on a precautionary basis, as being subject to a significant adverse effect denoted by OSV19-No1 in Table 3 and drawing SV-02 (see CFA19 Volume 5 sound, noise and vibration map book). This may take the form of the disturbance of activities inside the office building.

Highway Point

- 4.4.17 Highway Point is currently occupied by IAC Group Limited. A moderate operational airborne noise impact has been identified based upon the change in the daytime noise level outside this non-residential receptor. An assessment has been undertaken to determine if this impact would result in a significant effect at this non-residential receptor, using the significance criteria detailed in Volume 5: Appendix 001-000.
- 4.4.18 This receptor is located approximately 45m from the Proposed Scheme alignment, the building is a warehouse facility with no windows on the façade overlooking the route, but office windows on the oblique façade with a view of the Proposed Scheme. It is believed that ventilation is provided by opening the windows.

- 4.4.19 Highway Point offices are identified, on a precautionary basis, as being subject to a significant adverse effect denoted by OSV19-No1 in Table 3 and drawing SV-02 (see CFA19 Volume 5 sound, noise and vibration map book). This may take the form of the disturbance of activities inside the office building.

Summary

- 4.4.20 The assessment of operational noise and vibration indicates that significant effects are likely on the non-residential receptors identified in Table 6.
- 4.4.21 The assessment of effects on non-residential receptors has been undertaken on a reasonable worst case basis taking account of public available information about each receptor.

Table 6: Likely significant noise or vibration effects on non-residential receptors arising from operation of the Proposed Scheme

Significant effect number (see Map series SV-02, Table 1 and 3)	Type of significant effect and source	Time of day	Location and details
OSV19-No1	Noise disturbance of office activities ⁵ inside buildings due to the operation of train services.	Daytime	Office developments at Bromwich Court and Highway Point

Non-residential receptors: indirect effects

- 4.4.22 The transport assessment presented in Volume 5: Appendix TR-001-000, has been used to identify those roads or railways within this study area where the alignment remains as at present, but a change in flow or composition is identified which is greater than the screening criteria defined in Volume 5: Appendix SV-001-000. No roads or railways which exceed the criteria defined in Volume 5: Appendix SV-001-000 have been identified in this study area.
- 4.4.23 The assessment of operational noise and vibration indicates that significant indirect effects are unlikely to occur on non-residential receptors in this area.

Cumulative effects

- 4.4.24 Details of properties being currently developed which were afforded planning approval before the safeguarding date are presented in Volume 5: Appendix CToo4-000. Within this area, the operational sound, noise or vibration associated with these developments in conjunction with the operation of the Proposed Scheme do not result in any significant cumulative effects.

⁵ Potential of activity disturbance, especially for activities that require good conditions for verbal communication.

